

Teaching Adding and Subtracting Integers

Kinesthetic Method (Grade 6/7)

In your class put an Integer number line (from -10 to 10) on the floor in which the distance between integers is a short step.

Rule 1. In all movement we always start in zero and face in the positive direction.

Rule 2. The first number in an addition/subtraction sentence tells you where to go to from zero. Go there, facing in a positive direction.

Rule 3. The addition symbol is an instruction to step forward. The subtraction symbol is an instruction to step backward. The number of steps is determined by the second number in the sentence regardless of its sign.

Rule 4. The negative symbol in front of the second number is an instruction to make a 180 degree turn. The turn must be made before any steps are taken.

Note: in this method we think of any addition or subtraction $a \pm b$ as $0 + a \pm b$

Examples

$$5 + 3$$

(0) Start in Zero facing positive

(5) Move to 5

(+) Move forward (3) three steps.

You end up in eight (8)

$$5 - 3$$

(0) Start in Zero facing positive

(5) Move to 5

(-) Move backward (3) three steps.

You end up in two (2)

$$-5 + 3$$

(0) Start in Zero facing positive

(5) Move to -5

(+) Move forward (3) three steps.

You end up in negative two (-2)

$$-5 - 3$$

(0) Start in Zero facing positive

(5) Move to -5

(-) Move backward (3) three steps.

You end up in negative eight (-8)

$$5 + -3$$

(0) Start in Zero facing positive
 (5) Move to 5
 () **Turn around 180 degrees**
 (+) **Move forward (3) three steps.**
 You end up in two(2)

Note: Turning around 180 degrees and stepping forward is the same as stepping backward.

$$^{-}5 + ^{-}3$$

(0) Start in Zero facing positive
 (5) Move to $^{-}5$
 () Turn around 180 degrees
 (+) Move forward (3) three steps.
 You end up in negative eight ($^{-}8$)

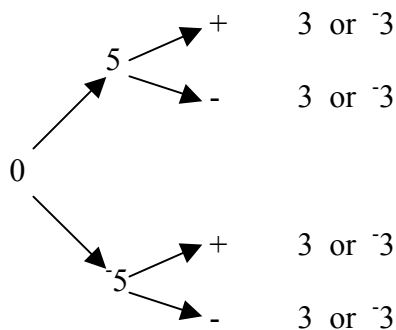
$$5 - ^{-}3$$

(0) Start in Zero facing positive
 (5) Move to 5
 () **Turn around 180 degrees**
 (-) **Move backward (3) three steps.**
 You end up in eight (8)

Note: Turning around 180 degrees and stepping backward is the same as stepping forward.

$$^{-}5 - ^{-}3$$

(0) Start in Zero facing positive
 (5) Move to $^{-}5$
 () Turn around 180 degrees
 (-) Move backward (3) three steps.
 You end up in negative 2 ($^{-}2$)



Number line as a solution set graph for an equation or inequality